Brief Description of Project

Giacomini Wetland Restoration Project
Point Reyes National Seashore

General Information

The National Park Service (Park Service) is proposing to conduct a wetlands restoration project at the Giacomini Ranch in Marin County, California. The Giacomini Ranch is part of the Golden Gate National Recreation Area. This portion of the Golden Gate National Recreation Area is administered by Point Reyes National Seashore. In 2000, the Park Service purchased the property using a combination of federal and state funds. State funding was provided by the California Department of Transportation under the agreement that up to 12.6 acres of restored wetlands could be used to fulfill mitigation obligations resulting from a road repair conducted on Highway 1 in the early 1990s. Most of the Giacomini Ranch will be managed under reservation of use by the former landowners until 2007, when full management will be transferred to the Park Service. In the interim, the Park Service will be conducting environmental planning and permitting processes for the proposed project and possibly initiating restoration efforts on the 100 acres that are not under reservation of use.

The proposed project would restore coastal wetlands on most of the 563-acre Giacomini Ranch, which is located at the southern end of Tomales Bay (**Figure 1**). Running along the eastern boundary of Point Reyes National Seashore, Tomales Bay is a 6,800-acre estuary that is approximately 12 miles long, one mile wide, and relatively shallow with an average depth of 18 feet (Tomales Bay Planning Group 2000). It occupies the ancient rift valley of the San Andreas fault zone (Daetwyler 1966). The Giacomini Ranch is bisected by Lagunitas Creek, which, with a drainage area of 81.7 square miles, represents the largest sub-watershed in Tomales Bay. Two other creeks, Fish Hatchery and Tomasini, flow into the western and eastern portions of the proposed project area, respectively.

Prior to 1862, most of the Giacomini Ranch was actually open water and intertidal mudflats, with the historic coastal salt marsh concentrated in the southern portion of the proposed project area (PWA et al. 1993; **Figure 2**). Logging, heavy grazing, and tilling in the latter half of the 19th century and early part of the 20th century, however, accelerated sediment delivery into the Tomales Bay watershed, resulting in a rapid growth of wetland habitat in the headwaters of the bay. Between the 1860s and the 1980s, approximately 650 acres of salt marsh habitat were created due to excessive sedimentation (PWA et al. 1993). The largest portion of sedimentation occurred prior to 1950: During the last 50 years, sedimentation delivery has been reduced due to the construction of several dams, including the Peters and Lagunitas Dams, which control about 70 percent of the Lagunitas Creek watershed (PWA et al. 1993). The rapid development of vegetated land allowed construction of the first dairy in the proposed project area around 1917 (PWA et al. 1993). Further expansion of the Lagunitas Creek delta in subsequent years encouraged Waldo Giacomini to construct levees and reclaim

approximately 563 acres of former salt marsh for conversion to pasturelands and dairy cattle grazing.

Most of the 563-acre Giacomini Ranch is dominated by a mixture of non-native pasture grasses and ruderal vegetation. However, levee construction and the subsequent oxidation or "drying" of soils has encouraged a small amount of subsidence or elevation drop (perhaps 1-2 feet) of the pasturelands (PWA et al. 1993), particularly in the northern portion of the property. This subsidence has allowed some recolonization by salt-tolerant species such as pickleweed (*Salicornia virginica*) and saltgrass (*Distichlis spicata*). In addition, freshwater inflow into the proposed project area from seeps along Point Reyes mesa and Inverness Ridge has created a complex mosaic of freshwater marsh and riparian habitat along the perimeter of the pasturelands and diked marsh habitats. This complex mosaic of habitats has led to the Giacomini Ranch supporting a diverse array of wildlife species, a large proportion of which are considered special status (Avocet Research Associates, *in prep*.). Most of these special status species are birds associated with the riparian-marsh-wet pastureland complex present, particularly in the northwestern and southeastern portions of the proposed project area (Avocet Research Associates, *in prep*.). Two other non-avian species that are listed as federally threatened or endangered do occur on the Giacomini Ranch, specifically the California red-legged frog (*Rana aurora draytonii*; federally threatened) and the tidewater goby (*Eucyclogobius newberryi*; federally endangered).

Restoring wetlands at the Giacomini Ranch will not only potentially increase habitat for some of these special status species, but could benefit the Tomales Bay watershed ecosystem as a whole. The state of California has reportedly lost more than 95 percent of its coastal wetlands. The percentage of loss is not quite as high in Tomales Bay, but the minimal acreage and fragmented nature of coastal wetlands historically present within the watershed increases the impact of losses that have occurred. Coastal wetlands provide valuable functions for both humans and wildlife through floodwater storage, food production, and filtration of nutrients and sediments. Increasing acreage of coastal wetlands could increase wetland functions and result in improved environmental conditions for both humans and wildlife in the Tomales Bay watershed. The San Francisco District of the Regional Water Quality Control Board has determined that Tomales Bay is impaired by sediment, nutrients, fecal coliform, and mercury under Section 303(d) of the Clean Water Act. This impairment jeopardizes not only but the bay's well-known oyster fisheries, but the wildlife species that use Tomales Bay for breeding or foraging habitat such as Pacific harbor seals, seal lions, gray whales, California brown pelican, and Pacific herring.

The Park Service is in the initial stages of the planning process for this restoration project and is requesting public input on a suitable range of alternatives. The National Park Service anticipates that alternatives for restoration of the Project Area would likely involve some type of geomorphic/topographic alterations aimed at restoring natural hydrologic and ecological processes. These potential alterations could change the current hydrologic regime within the Project Area, leading either to muted tidal action, full tidal action, and/or natural creek action (i.e., allowing creeks to meander naturally). Restoring

natural hydrologic and ecological processes would likely result in development of a complex mosaic of habitat types, including salt marsh, brackish marsh, freshwater marsh, riparian, mudflat, and open water. An additional alternative would involve no change in current hydrologic regime (No Project alternative). Restoration actions undertaken as part of the project will be designed to ensure that flood risks to adjacent private residences and saltwater intrusion into groundwater wells in Point Reyes Station will not be aggravated beyond current conditions. As part of the alternatives development, the National Park Service will explore both the potential for land- and water-based recreational opportunities: opportunities will be balanced with needs of Tomales Bay ecosystem that the project is intended to benefit.

Literature Cited

Avocet Research Associates. *In prep*. Giacomini Marsh Restoration Site special status animal species: Reconnaissance and compliance. Report to the National Park Service.

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PWA (Philip Williams & Associates, Ltd), Wetlands Research Associates, Strong Associates, and L.J. Butler. 1993. An evaluation of the feasibility of wetland restoration on the Giacomini Ranch, Marin County. Prepared for the National Park Service.

Tomales Bay Planning Group. 2000 (September). Draft. Tomales Bay. Guidelines for protection and use.